| **Lesson Title and Topic** | **Lesson Numbers** | **Curriculum Expectations** | **Lesson Strategy and Assessment** | **Evaluation Including Criteria Addressed from Achievement Cart** |
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| Diagnostic, Discussion and Mini-Lecture  *“What comes to mind when you think of germs?”* | 1 | C2.1 | Mind-map activity – what comes to mind when you think of germs? | K/U  Diagnostic assessment for opening the unit, assess students on their background knowledge |
| What are pathogens?– types and behaviours | 2 | C2.1, C2.3 | Connect back to mind map – extend base thinking with correct terms (viruses, bacteria, etc) | K/U, A  Continuing diagnostic assessment by building on the previous mind-map |
| Lab - Identifying pathogens - take swabs from cell phones/wallets/money and plate on agar | 3 | C2.4 | Show MythBusters YouTube video called “Hidden Nasties” <http://www.youtube.com/watch?v=uLMUasyxkfA>  Then have students complete the lab, collecting different bacteria samples from around the school and plating on agar to see growth | T/I  Collect and assess lab reports once incubation is complete. |
| How pathogens travel – Infection Activity | 4 | C3.1 | “Infect” one student with UV sensitive dye on their hand. Then have every student shake hands with 2 other students. Reveal “bacteria” under UV light, to see how quickly germs and spread | A  Have students complete reflection/exit cards on their thoughts about bacterial transfer |
| Life cycles of pathogens | 5 | C3.2 | Have students create their own representation of the life cycle – picture, flow chart, words, etc. Major project given – students pick disease from a list that has had significant impact in a specific period of history - see lesson 14. | C  Collect students’ interpretation of the life cycle of a pathogen |
| Virus Lytic Cycle | 6 | C3.2 | Gizmos activity with preassessment worksheet, discussion on worksheet, demonstration of Gizmos activity on screen projector. Students who finish early need to do questions on how many bacteria would be infected in 1 hour? In 1 day?  www.explorelearning.com | K/U  Think-pair-share “How does a computer virus compare with a biological one?” |
| How does the body defend itself | 7 | C3.3 | Go over skin, tears, pH, mucus, etc. Have students complete a worksheet with a picture of a body on it, students point out and list the places where bacteria can get in, and how the body defends itself | K/U  Collect students’ “bodies” and assess on accuracy |
| Lab - Vaccines / Antibiotics / Antiseptics | 8 | C3.4 | Students plate different bacteria on agar, along with antibiotic “discs”. After incubation, students record their findings about the effectiveness of antibiotics | T/I, C, A  Collect student labs and assess based on discussion of effectiveness |
| Basic aseptic techniques at home and in the workplace | 9 | C2.2, C3.5, C3.7 | Tie information into the 2 previous lessons about the spread of life cycles.  Watch Bill Nye episode about germs  Have students create a safety poster about 1 aseptic technique. Working in small groups. | C, A  Assess student’s posters on accuracy of information, poster qualities, and attractiveness |
| Holistic vs. Conventional Treatments | 10 | C1.2, C3.4 | Debate topic – students will pick a side and debate on either holistic or conventional treatments to disease. Ends with message that maybe we don’t need to pick a side. Do you not go to chiropractor to fix your back even though this practitioner is shown to be the most effective at back injuries because he/she is considered holistic? Do you refuse proven conventional treatments because you prefer holistic versions? Is this something we should debate or come together and support the other side as well? | C  Assess the strength of students’ points |
| How individuals can greatly affect the health of the many | 11 | C1.2 | Jigsaw – food handlers, recreational needle users, health practitioners, “regular person”. What policies and procedures do we enforce now? What else should/could we do?. Articles on safe injection sites (Johnston, A., Meek, C., & Sibbald, B. (2004). News @ a glance.*Canadian Medical Association.Journal, 170*(8), 1218-1218-9. Retrieved from [http://search.proquest.com/docview/205023779?accountid=14771](http://search.proquest.com/docview/205023779?accountid=14771" \t "_blank)), choosing to work when sick (Johnston, A., Meek, C., & Sibbald, B. (2004). News @ a glance.*Canadian Medical Association.Journal, 170*(8), 1218-1218-9. Retrieved from [http://search.proquest.com/docview/205023779?accountid=14771](http://search.proquest.com/docview/205023779?accountid=14771" \t "_blank)), food handlers assessment (Emilio E. DeBess, Eric Pippert, Frederick J. Angulo and ,Paul R. Cieslak. Foodborne Pathogens and Disease. April 2009, 6(3): 329-335. doi:10.1089/fpd.2008.0102.) and compulsory detention (http://resolver.scholarsportal.info.myaccess.library.utoronto.ca/resolve/14617781/v05i0002/387\_cdtptsoid) | A, C  Collect student reflections/exit cards  “When is it justified to infringe on the individuals right to free will?” |
| Opinion piece/Group positions | 12 | C1.2 | Possible questions:  Should vaccines be mandatory?  Should drug company lobbying be illegal?  Should known carriers of HIV who have unprotected sex be charged with murder?  How much should governments be involved?  How about those countries whose governments don’t have the resources? | C, T/I, A  Assess students on their arguments and support |
| Solving HIV | 13 | C1.1 | Class Discussion: Do the poor in Africia have different views on health? Why? What can we do to solve this? Who is responsible? What creative solutions exit? Do some even want this fixed? | C  Collect student exit cards |
| Introduction of Culminating Task – Case studies on infectious diseases | 14 | C1, C2, C3 | Introduction of culminating task – Essays on how they spread, how they were able to spread to so many people, why it wouldn’t happen now, what should be done differently, “those who don’t learn from history are doomed to repeat it”. Work done in computer lab. Rough outline with assigned questions should be completed for review and assessed for understanding. | C, T/I  Evaluate rough copies in class and assigned questions to address |
| New Medicine | 15 | C1.1, C3.6 | Look at the advances in medicine. Have they helped or hurt society? What can we learn from those mistakes? When was the last disease cured? What is the motivation for curing these? How much money do different companies raise to cure diseases?  Have each student analyze one “new medicine” and provide the pros and cons | A  Collect pro/con list from students. |
| Avian Flu | 16 | C3.2 | Is it the next pandemic? What can we do?  Students will use their previous knowledge of what causes a pandemic, and how it can be avoided. Students will work in small groups to create a “What if” scenario, and come up with a action plan on preventing this | T/I, A  Collect the groups “action plans”  Case studies on infectious diseases due at beginning of class. |
| Review | 17 |  | Jeopardy |  |
| Culminating Activity Work Period | 18-19 | C1, C2, C3 | Students use notes on their pathogen to create a public awareness campaign – the history, the spread, the vaccines/cure (or lack thereof). Students will create a campaign pointed towards people that would be affected by the pathogen | K/U, T, A, C  Student present teacher with their idea on their “public awareness” campign, and who will be the target audience |
| Test | 20 | C1, C2, C3 |  | K/U, T, A, C |
| Culminating Task Due |  | C1, C2, C3 |  |  |